



DEPARTMENT OF NATURAL RESOURCES

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May 2, 2006

Mr. Peter Manger
Design Engineer
OPW Fueling Components
P.O. Box 405003
Cincinnati, OH 45240-2003

APPROVAL LETTER 2006-1

Dear Mr. Manger:

This letter is to inform you and OPW Fueling Components, of the department's approval of the OPW, Enhanced Vapor Recovery Stage I vapor recovery system, for use in all Missouri Stage I vapor recovery required gasoline dispensing facilities. The California Air Resources Board has begun the Enhanced Vapor Recovery certification of all new vapor recovery systems to meet these more stringent standards. With this approval, all Missouri gasoline dispensing facilities in the ozone non-attainment or maintenance areas, who must apply for vapor recovery permits to construct new facilities will be required to incorporate this Missouri Performance Evaluation Test Procedure (MOPETP) approved Enhanced Vapor Recovery Stage I system, or a similar Enhanced Vapor Recovery Stage I system which may be approved in the near future. All standards and conditions applied in the California Air Resources Board certification for this system will also be held as a condition of this MOPETP approval.

Your company, after receiving California Air Resources Board Enhanced Vapor Recovery certification E.O. Vapor Recovery-102-E, applied to this program to request MOPETP testing and approval of your OPW Enhanced Vapor Recovery Stage I vapor recovery system. The subsequent MOPETP testing was conducted at the Sinclair Oil station # 24089 (state coded 0217). All other Stage II vapor recovery components at this test site were previously California Air Resources Board certified and MOPETP approved. The official testing began on August 23, 2005, and was completed on January 18, 2006. During this official testing period the test site was under continuous monitoring of system pressure, temperature, fuel drops, maintenance, as well as atmospheric pressure and temperature. This data along with the spot checks provided by leak decay tests, and other tests listed below, were used to evaluate the system.

Older Stage I systems were prone to reoccurring leaks due to innate problems of design such as vapor and fuel port adaptors coming unscrewed during the final stages of a tanker delivery of product to the Underground Storage Tanks. This issue has been greatly improved by the swivel adaptor design. Other similar issues have been addressed as well in the new OPW Enhanced Vapor Recovery Stage I system. With the new California Air Resources Board Enhanced Vapor Recovery certification the standards for emission reduction has been enhanced as well. Pressure vacuum valves, and drop tubes with overfill prevention valves have to meet more stringent standards to achieve California Air Resources Board and MOPETP approval. These much needed improvements will go a long way to reducing the emissions of gasoline dispensing facilities.



The MOPETP testing for OPW Stage I Enhanced Vapor Recovery at the Sinclair station included the following tests and evaluations.

Listing of tests performed during the OPW Enhanced Vapor Recovery Stage I MOPETP.

Test	Date
Continuous Monitoring (MOTP-01) - System	August 23, 2005 through January 18, 2006
Bench Testing (MOTP-02) – PV Valves	August 23, 2005
	December 14, 2005
	January 17, 2006
Static Pressure (Leak Decay) Testing (MOTP-03) – System	August 23, 2005
	September 14, 2005
	January 17, 2006
Dynamic Pressure (Back Pressure) Testing (MO/TP-04) – System	August 23, 2005
	January 17, 2006
Stage I Efficiency Test (MOTP-06) – Stage I Components	October 13, 2005
	January 18, 2006
Torque Test (MOTP-10) – Swivel Adaptors	August 23, 2005
	January 17, 2006
Drop Tube/Drain Valve Leak Test (MOTP-11) – Stage I Product delivery components	August 23, 2005
	January 17, 2006

The Stage I overall efficiency of the system must be $\geq 98\%$ relative to the uncontrolled emissions under conditions similar to those during the testing.

The Stage I Efficiency Test (MOTP-06) was initially performed on October 13, 2005. The PV vents had been bagged using approximately 20-gallon trash bags. There were excess emissions during the testing demonstrated by inflation of the trash bags and excessive pressure in the USTs. The test may have been adversely affected by one or more of the following issues: fuel drop allowed to contain conventional winter gasoline (federal Katrina RFG/RVP fuel waiver) during recent fuel drops, higher than normal winter temperatures, one compartment with 50% ullage, and probable issues with the cargo tanker (Sinclair #502) indicated by a vibrating noise from the tanker during the high pressure parts of the test.

The test was successfully repeated on January 18, 2006, after the tanker truck had been re-inspected and some valves repaired. The waiver period fuel allowed to contain conventional gasoline or as pure conventional gasoline had long passed and the temperatures were much cooler. The test passed with no emissions (UST at vacuum during the entire test) or 100% efficiency. A total of 3150 gallons of fuel was delivered (1350 gallons of Premium, and 1800 gallons of Regular).

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Determination of Stage I efficiency using the continuous temperature and pressure monitoring data over the period from August 23, 2005, through January 18, 2006, indicated an overall emission factor of 0.02 pounds HC/1000 gallons of fuel dispensed over the full period of 147 days.

All OPW Stage I Enhanced Vapor Recovery systems and components must be installed and maintained as directed in the California Air Resources Board E.O. vapor recovery -102-E, or most recent applicable executive order, and as directed in the applicable Installation and Maintenance Manuals provide by the manufacturers. This includes the component "replace by" dates which may be attached to the component.

In Appendix A, B, and C, the various components, which comprise an OPW Enhanced Vapor Recovery Stage I vapor recovery system, are listed. All new stations will be required to install this system, or a similar Stage I Enhanced Vapor Recovery system, which may be MOPETP approved in the future. Installation, maintenance, and testing requirements must meet manufacturer recommendations and all California Air Resources Board Enhanced Vapor Recovery conditions. Existing stations (which do not apply for a construction permit) will not be required to install this Stage I upgrade. However, in the foreseeable future, this upgrade will most likely be required of all existing stations. Existing stations may install compatible OPW Enhanced Vapor Recovery Stage I components from this list in a "piece meal" fashion, in a gradual effort to meet future requirements, as long as their entire system continues to function properly and they pass the required tests.

Thank you for your cooperation in this matter. If you should have any questions about this approval, please contact Mr. Bud Pratt at the Missouri Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, or by telephone at (573) 751-4817.

Sincerely

AIR POLLUTION CONTROL PROGRAM

Original Signed by Steven Feeler for James L. Kavanaugh

James L. Kavanaugh
Director

JLK:bpd

Enclosure: Appendix A, B, C

c: All Stage I and StageII contacts

APPENDIX A

The Missouri Department of Natural Resources Air Pollution Control Program approves the equipment listed in the table below (Appendix A, B, C), subject to the terms and conditions of the Balance system approval listed on the MOPETP Approval APCP-0002-001-99.

List of components of an OPW Stage I EVR system.

Part Number	Evaluation Method	Description
61VSA-1020-EVR	Tested	Vapor Swivel Adapter, Bronze, Bronze
61SALP-1020-EVR	Tested	Fuel Swivel Adapter Low Profile, Bronze, Bronze
634TT-7085-EVR	Tested	Dust Cap, Product
1711T-7085-EVR	Tested	Dust Cap, Vapor
634LPC -0400	Tested	Dust Cap, Low Profile Product
1711LPC-0300	Tested	Dust Cap, Low Profile Vapor
FSA- 400, -400-S	-400 tested, -400-S reviewed	Face Seal Adaptor
61JSK- Series	-4410 tested, -4400-EVR & -44CB reviewed	Jack Screw Assembly for drop tubes
53VML- Series	-0120 (2" diameter and 12" long) and – 3050 (3" diameter and 5" long) tested	Ball Float – 2" and 3" with various lengths
233- Series	-4432 tested	Extractor Valve – (Tee and Cross)
62M – Series	-0375 tested	Monitoring Cap – 4" Threaded
71SO-Series	-400C tested	Drop tube w/ Overfill Prevention valve. Various lengths
61T- Series	-7268 tested	Drop tube, Straight. Various lengths
Husky: 4885	Tested	Pressure Vacuum Vent 3" H2O pres., 8" H2O vac, 2" thread-on
OPW/Pomeco 6111-1400-EVR	Tested	Tank Bottom Protector (optional)

APPENDIX B

Details of Spill Container component designations

Spill Containers & Cover TTT-21WWXX-YYYY	1-2100-DEVR and – PEVR tested	<p>TTT- Indicates spill bucket material /Cover type:</p> <p>1= Aluminum 1C = Cast Iron 1SC = Sealable Al. Cover with expandable seal</p> <p>WWW- indicates bucket size 00 = 5 gallon 15 = 15 gallon 00E = 7 gallon</p> <p>X – indicates C = Cast iron Base No lettering for composite base</p> <p>Y- indicates drain valve or plug D = Drain Valve P = Plug</p> <p>ZZZ – indicates configuration EVR = Standard spill bucket SH = self supporting ring and cover for Multi-Port</p>
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Details of Multi-Ports

Multi-Ports 65QQEVR-R-SS-TT-UU-VV-WW-XX-Y-Z	Not tested but reviewed	<p>QQ – indicates spill bucket material / cover type:</p> <p>11 = composite base, bolted down cover 21 = composite base, roto-lock cover 61 = Cast iron base , bolt down cover 71 = Cast iron base , roto-lock cover</p> <p>WW – indicates spill container cover style RT = Rain tight SC = Sealable cover</p> <p>XX – indicates spill container capacity in gallons 05 = 5 gallon 07 = 7.5 gallons 15 = 15 gallons</p>
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Note: The “6” prefix in the part number is OPW’s designation for a complete multi-port manway assembly. “R”, “SS”, “TT”, “UU”, “VV”, “Y” and “Z” designates manway design characteristics not required to be certified as part of the vapor recovery system cer

APPENDIX C

Details of Secondary Contained Spill Containers

Secondary Contained Spill containers 5VVL- WW20XXYY1Z	Not tested but reviewed	VV - indicates base configuration 11 = Composite 61 = Cast Iron
		WW - indicates connection configuration RM = Remote fill 00 = Direct fill
		XX - indicates spill container cover style RT = Rain tight SC = Sealable cover
		YY - indicates spill container capacity in gallons 05 = 5 gallons 07 = 7 gallons
		Z - indicates drain valve configuration P = Plug (Vapor) Blank = Drain valve (Fill)